# SAFETY PRECAUTIONS FOR MATERIALS MANAGEMENT OPERATIONS

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## 1. GENERAL

**1.01** This section defines specific safety precautions to be observed by Materials Management (MM) personnel in the performance of their day-to-day job.

**1.02** Whenever this section is reissued, the reason(s) for reissue will be given in this paragraph.

**1.03** Functions not described in other sections are discussed in the following paragraphs. A complete listing of all pertinent Bell System Practices (BSPs) is contained in Section 740-000-002, Issue 1.

## 2. SHOES

**2.01** Some areas and operations in warehouses and yards present hazards that can result in foot injuries. These include, but are not limited to:

- Receiving, staging, loading, and handling material
- Scrap wire and cable handling
- Handling cable reels of all sizes
- Walking and/or working in areas where this work is in process
- Walking across rough terrain or unpaved areas
- Walking and/or working in debris strewn areas.

**2.02** In order to minimize the severity and number of foot injuries, safe footwear shall be worn whenever working in an area or performing operations where foot injuries may occur.

**2.03** Safe footwear is footwear of the type that will provide protection from punctures and abrasions due to falling or kicked objects. The shoe shall completely enclose the foot with leather or material of equivalent strength, with slip resistant soles. Canvas shoes (tennis shoes, sneakers, etc), open-toed shoes, sandals, and high heel shoes with less than one square inch of walking surface at the heel, is not considered acceptable footwear and shall not be permitted where safe footwear is required.

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## 3. GLOVES

**3.01** Suitable work gloves shall be worn to protect against hand and finger injuries when handling cable reels of all sizes, wire, cable, all scrap material, wooden crates, sharp or pointed objects, glass items, etc, or wherever conditions exist that could result in cuts, abrasions, or other injuries to the hands or fingers. Acid resistant neoprene protective gloves shall be worn when handling wet cell batteries.

**3.02** Suitable work gloves should be made of leather or a material of equivalent strength, and should cover the entire hand at least to the wrist. Open back "driving" gloves, dress gloves (kid, pigskin, etc), cloth gloves, and mittens are not acceptable substitutes and shall not be worn.

**3.03** Gloves that have holes worn through the fingers or other areas do not provide the required protection and can constitute a hazard to the employee and should be discarded and replaced promptly.

## 4. HAIR, CLOTHING, AND JEWELRY

**4.01** Long hair, loose clothing, and jewelry present unnecessary hazards to an employee working around moving tools and machinery or handling material, especially bulky items.

**4.02** While working in close proximity to moving machinery, such as, conveyor systems, bench grinders, electric drills, mechanical or hydraulic cable cutters, or any tools or equipment that present potentially hazardous conditions, long hair (generally shoulder length or longer) should be netted, tied back, or contained in such a manner as to eliminate the hazard. If a hard hat is worn, the hair should be contained under the crown of the hat.

**4.03** Jewelry, especially the type that hangs loose from the body, such as, dangling earrings, bracelets and necklaces, decorative metal belts, etc, shall not be worn while working in the warehouse, yards, or around moving machinery. Rings present a special hazard. Serious finger injuries or amputation can occur when a ring gets caught by a rotating or moving object or gets caught on a stationery object and the employee is moving. Rings should be removed unless gloves are worn.

**4.04** Work clothing shall not have any loose or surplus material flapping around which can get caught in machinery, equipment, furniture, or other objects. Neck ties or other neckwear which hang loose shall be removed when working in the warehouse, yards, or other areas where wearing such articles poses a potential hazard.

## 5. LIFTING

**5.01** Instructions in safe lifting practices shall be given to all employees who are required to lift even very light loads in their work. It should also be covered periodically with experienced employees and immediately with employees observed to lift improperly or, who have incurred injuries as a result of improper lifting procedures.

**5.02** The following describes and depicts proper lifting procedures.

***PROPER LIFTING***—can be accomplished safely by following these ***SIX***—steps.

#1 - PUT ONE FOOT ALONGSIDE THE OBJECT AND ONE FOOT BEHIND THE OBJECT

FIRST, LOOK OVER THE OBJECT TO BE LIFTED TO MAKE SURE IT IS NOT TOO HEAVY OR TOO CLUMSY FOR GOOD BALANCE. THEN, STAND CLOSE TO THE OBJECT WITH THE FEET FLAT AND APART FOR GOOD BALANCE - ONE FOOT ALONGSIDE THE OBJECT -- ONE BEHIND.

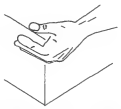
#2 - KEEP YOUR BACK STRAIGHT

"STRADDLE" THE OBJECT SOMEWHAT, GRASP THE OBJECT, KEEP THE TORSO ERECT, LIFT WITH YOUR LEGS, AND KEEP YOUR BACK STRAIGHT.

#3 - TUCK IN YOUR CHIN SO YOUR HEAD AND NECK CONTINUE THE STRAIGHT BACK LINE

POSITIONING YOUR FEET ALONGSIDE AND BEHIND THE OBJECT AND TUCKING IN YOUR CHIN WILL HELP KEEP YOUR BACK STRAIGHT.

#4 - GET A FIRM GRIP WITH THE PALMS OF YOUR HANDS



MANY LIFTING ACCIDENTS OCCUR WHEN THE OBJECT SLIPS FROM THE HAND, SO GET A FIRM GRIP WITH THE PALMS OF YOUR HANDS (BECAUSE THE PALMS ARE STRONGER THAN THE FINGERS ALONE.)

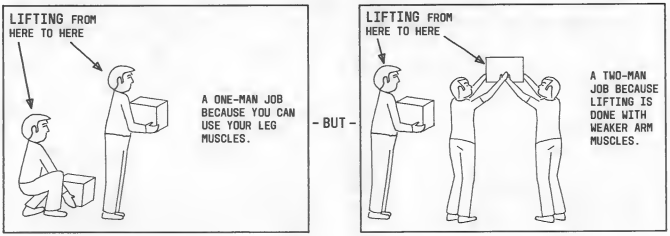
#5 - DRAW THE OBJECT IN CLOSE WITH YOUR ARMS AND ELBOWS TUCKED INSIDE YOUR KNEES, TO KEEP BODY WEIGHT CENTERED

DRAWING THE OBJECT IN CLOSE HELPS KEEP YOUR BODY WEIGHT CENTERED BY ALLOWING YOU TO TAKE ADVANTAGE OF THE MECHANICAL LEVERAGE OF YOUR BODY.

#6 - LIFT STRAIGHT WITH A THRUST OF THE REAR FOOT

LIFT THE OBJECT STRAIGHT UP IN FRONT OF YOU WITH A THRUST OF THE REAR FOOT AND DON'T TWIST WHILE LIFTING. THE THRUST OF THE REAR FOOT WILL HELP YOU MAINTAIN BODY BALANCE TO STRAIGHTEN YOUR KNEES AND STAND. IT ALSO ENSURES THE USE OF YOUR LEG MUSCLES.

**5.03** Here are some other points to remember.



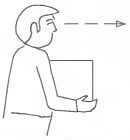
**5.04** Carrying an object.

***CARRYING***—can be accomplished safely by following these ***FIVE*** steps.

#1 - KEEP THE OBJECT CLOSE TO YOUR BODY

AGAIN, KEEPING THE OBJECT CLOSE ALLOWS YOU TO TAKE ADVANTAGE OF THE MECHANICAL LEVERAGE OF YOUR BODY.

#2 - ALWAYS HAVE CLEAR VISION

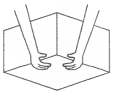


IF THE OBJECT OBSTRUCTS YOUR VISION OR WALKING PATH - GET HELP.

#3 - AVOID TWISTING YOUR BODY

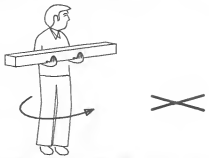
IF YOU HAVE TO CHANGE DIRECTION, DO SO BY MOVING YOUR FEET - DO NOT TWIST YOUR BODY.

#4 - DON'T CHANGE YOUR GRIP



UNLESS THE OBJECT'S WEIGHT IS SUPPORTED, DON'T CHANGE YOUR GRIP.

#5 - FACE THE SPOT THE OBJECT IS TO REST ON



TURN YOUR FEET AND WHOLE BODY IN THE RIGHT DIRECTION SO YOU CAN FACE THE SPOT THE OBJECT IS TO REST ON.

**5.05** Setting an object down.

***SETTING***—can be accomplished safely by following these ***FIVE*** steps.

#1 - BEND YOUR KNEES

TO LOWER THE OBJECT, BEND YOUR KNEES, KEEP YOUR BACK STRAIGHT AND THE WEIGHT CLOSE TO YOUR BODY.

#2 - WATCH YOUR FINGERS

ALLOW ROOM FOR THE OBJECT WITHOUT DANGER TO YOUR FINGERS (OR YOUR TOES).

#3 - SLIDE THE OBJECT

SLIDE THE OBJECT INTO TIGHT PLACES -- IT'S MUCH EASIER AND SAFER THAN TRYING TO LIFT.

#4 - DEPOSIT THE OBJECT

TO DEPOSIT THE OBJECT ON A BENCH OR TABLE, PLACE IT ON THE EDGE AND PUSH IT FORWARD WITH YOUR ARMS AND BODY.

#5 - BE SURE THE OBJECT IS SECURE

BE SURE THE OBJECT IS SECURE WHERE YOU PUT IT DOWN - WILL IT FALL? TIP OVER? OR BE IN SOMEONE'S WAY?

**5.06** Team lifting.

IF AN OBJECT IS TOO HEAVY, LARGE, BULKY, LONG, HARD TO HANDLE, OR HAS TO BE PLACED HIGH UP, TRY . . . . . .

(THAT'S TWO OR MORE PEOPLE WORKING TOGETHER.)

WORKERS SHOULD BE ABOUT THE SAME SIZE AND ONE SHOULD GIVE SIGNALS SO THAT ALL WORK TOGETHER.

One of the team members should give signals so that all members will work together. Example of a signal would be:

Ready ----------Lift

Ready - one, two, three - Lift

## 6. STAIRWAY DELIVERIES

**6.01** Deliveries which require employees to carry material up or down stairways require precautions and procedures in addition to those covered in paragraph 5.06 above.

**6.02** Before attempting to make deliveries, employees should check out the path to be followed to ascertain that there are no hidden hazards to be encountered. These hazards are: inadequate lighting, loose objects on the steps or landings, hidden doorways off the landings that could be opened inadvertently and block the way, and loose or faulty railings. The stairway should be wide enough to accommodate the item being delivered.

**6.03** Where two or more employees are involved in the process, one of them should be identified as the one who will control the operation and give the proper voice commands to ensure coordinated team work in the process. Examples of team lifting commands are covered in paragraph 5.06.

**6.04** The team members should all face the object being lifted. Bulky and/or heavy objects should be lifted one step at a time to give each member an opportunity to change position in preparation for taking the next step up or down. All movements should be done on command as outlined above.

**6.05** Whenever possible, mechanical lifting aids should be used. These would include such items as hand trucks, manual stair dollies, or battery-powered stair climbers. Employees using these devices should be thoroughly familiar with their use of operation.

## 7. WET CELL BATTERIES

**7.01** This part supplements the information contained in Sections 157-601-201, 157-601-701, 157-601-306, and 720-340-100.

**7.02** Smoking and open flames are prohibited when working around or handling wet cell batteries to guard against explosion due to the presence of hydrogen gas.

**7.03** Employees should be instructed to handle and lift all batteries and battery containers with caution and to avoid tilting them to prevent spillage of the electrolyte.

**7.04** The exterior of packing cases of all batteries received shall be examined for signs of rough handling. Wet spots on the sides or bottoms of packing cases may be indications of leaking jars or cells broken in shipment.

**7.05** Damaged batteries should be transported to a well ventilated isolated area where contact by persons would be unlikely and where property will not be damaged by seepage of the electrolyte. Such batteries shall be disposed of as soon as possible.

**7.06** Exposed terminals of large batteries shall be covered with insulating material, such as rubber blankets, to prevent short circuiting the cells.

**7.07** Hoisting equipment, when in use, shall be of a type which assures a vertical lift and does not exert pressure on the battery case that may cause a break or crack in the battery.

**7.08** Batteries, when handled on pallets or trucks, shall be placed to prevent breakage by striking each other or other objects. Loose batteries must never be stacked one on top of another. Also, unpackaged batteries shall not be tiered.

**7.09** Wet-type batteries shall be stored at floor level. Dry-type batteries shall be stored at floor level if the electrolyte is packaged within the battery containers.

**7.10** Old storage batteries that have been removed from service and returned for disposition present hazards because of the possible charges remaining in them, which could cause fires or injuries whenever the terminals are shorted by contact with metal. Also, the electrolyte could cause acid burns to employees and damage to floors and equipment. All cables attached to the terminal posts of returned batteries shall be promptly removed by using wrenches and other tools that are of the nonsparking type, and are properly and thoroughly insulated to prevent short circuiting the cells.

**7.11** Containers used to ship batteries shall comply with OSHA, DOT, and EPA requirements and

shall be in such condition that will permit safe handling by employees, the carrier and other persons who may have occasion to handle the containers. The batteries shall be placed inside plastic containers and the voids filled with dunnage material such as bubble wrap, cardboard, newspaper, etc. A space should exist between the top of the battery and container and this space should be packed with dunnage to protect the caps.

## 8. MANUAL INDUSTRIAL EQUIPMENT

**8.01** This part outlines the precautions to be observed in the operation of industrial manually operated material handling equipment including, but not limited to, pallet jacks, platform trucks, six wheelers, hand trucks, skids, pallets, and dollies used to carry material.

**8.02** Equipment shall be inspected daily for defects. Wheels should be checked for cracks and shall roll and turn freely with no excess play on the axles. If the equipment is equipped with pneumatic tires, they shall be properly inflated to the level indicated on the tire.

**8.03** Braces and frames shall be checked for bent or broken members, welds, loose bolts, and rivets. Deck boards and other surfaces shall be sound and free from splinters and/or sharp edges. Brakes shall operate freely and firmly.

**8.04** Defects shall be promptly corrected before equipment is used.

**8.05** Make certain that pallets and other load carrying devices do not have any broken or loose members and that the load is secure and properly balanced with the center of gravity low enough to prevent tipping. Loads that may slide or roll shall be tied. Wherever practicable, loads shall not protrude beyond the edges of the equipment. Where this is impracticable, the overhangs shall be flagged and the route of travel planned to avoid exposing other employees to danger and/or damage to property and equipment.

**8.06** Material shall be stacked in such a manner that the view of the operator is unobstructed. If the load must be placed so that the view of the operator is obstructed, additional assistance shall be obtained to ensure safe practices are followed.

**8.07** When loading or unloading material handling equipment, employees should keep feet clear of the wheels. They should exercise care to avoid injury to feet due to falling loads or wheels rolling over the feet. Safe footwear should be worn. Brakes shall be set when loading or unloading equipment.

**8.08** When pushing manual material handling equipment, operators shall use constant vigilance to avoid running wheels off dock plates and platforms. They shall also exercise caution to avoid collisions with other employees or running wheels over their feet.

**8.09** Care shall be taken to avoid collision with other equipment and/or obstructions and to keep hands inside the truck handrails so that hands will not be injured by striking side obstructions. Care should also be taken to avoid trying to move equipment in aisles, through doorways, and other areas that are too narrow to clear the equipment and the load.

**8.10** Equipment shall be operated at safe speeds and kept under control at all times. Equipment shall not be operated two abreast in aisles and shall not pass one another when both are moving in the same direction in an aisle. Equipment meeting each other from opposite directions in the same aisle may pass carefully and slowly after making certain there is sufficient space to pass safely.

**8.11** Intersections, doorways, blind corners, and narrow aisles shall be approached cautiously and negotiated at minimum speed. Operators should be alert for other employees at all times.

**8.12** Equipment shall not be pushed or pulled over breaks in the floor or objects on the floor that might cause the equipment to halt abruptly or cause the load to shift or fall off. Loose objects in the path of the equipment should be removed or the route altered to avoid striking the objects.

**8.13** Generally, manual material handling equipment should be pushed rather than pulled, except as outlined in paragraph 8.14. If pulling is required, employees must use care to keep feet from being caught under wheels.

**8.14** Pallet jacks and skid transporting equipment shall be pulled except when inserting the forks in a pallet or skid or when necessary to maneuver in close quarters.

**8.15** When using material handling equipment, no employee shall ride or allow anyone to ride on the equipment.

**8.16** Unused equipment shall be stored in the space designated. Forks, whether loaded or empty shall be in the lowered position and the brakes on all equipment shall be set when not in use. Handles shall be tilted forward to avoid a tripping hazard.

## 9. POWERED INDUSTRIAL EQUIPMENT

**9.01** Powered industrial equipment shall include but is not limited to the following:

- Powered Industrial Trucks
- Forklift Trucks
- Powered Pallet Jacks.

**9.02** Powered industrial equipment shall be operated by trained and (where required) licensed or certificated personnel only.

**9.03** Rolling equipment such as powered industrial trucks, forklift trucks, and powered pallet jacks shall be operated at safe speeds which will permit safe stopping with or without a load. Equipment shall be operated at below normal speed on wet or slippery surfaces, intersections, making turns, and when moving on ramps, docks, dock boards, and bridging plates.

**9.04** When two pieces of equipment meet at an intersection, the equipment on the right has the right of way. When a pedestrian and a piece of equipment meet at an intersection, the equipment has the right of way. However, the equipment operator must exercise good judgment and control at all times and be prepared to stop in the event the pedestrian fails to yield.

**9.05** When one piece of rolling equipment is following another, a space of not less than three times the length of the trailing unit shall be maintained between each piece of equipment. Such equipment shall not be operated two abreast in an aisle and shall not pass one another when moving in the same direction.

**9.06** Rolling equipment approaching each other from opposite directions in the same aisle shall be operated at reduced speeds and shall pass only after determining that there is sufficient room to clear the equipment and/or loads safely.

**9.07** Riders are prohibited on rolling equipment unless the equipment is specifically equipped for that purpose and are authorized by supervision.

**9.08** Rolling equipment shall never be driven up to a person standing against a fixed object such as a workbench, desk, wall, etc.

**9.09** When maneuvering rolling equipment in the proximity of pedestrians or other employees, the operator shall sound the horn if the equipment is so equipped, and be on the alert so that evasive action can be taken to avoid contact between the equipment and a person that could result in injury.

**9.10** When a forklift truck is in use, never permit another person to be under the forks whether loaded or unloaded.

**9.11** Operators of forklift trucks shall not extend hands and/or feet between the masts or extend them outside the marked travel lanes.

**9.12** Operators shall be aware of the capacity of the equipment they are using. The equipment capacity is indicated on the manufacturer's nameplate. Loads shall be within the capacity of the equipment.

**9.13** To the extent practicable, loads should be avoided that obstruct the forward view of the operator. If, however, the load does block the forward view, travel shall be in the direction where the load will be trailing (in reverse) and the operator shall face in the direction of travel.

**9.14** When picking up loads, the operator shall ensure that the forks are properly spaced to accommodate the item being picked up and to ensure proper load balance. The forks shall be positioned as far under the load as possible, the mast tilted back to stabilize the load and lifted only as high as necessary to move the load, and to clear any obstacles that cannot be removed from the path of travel.

**9.15** Loads shall not be moved while high on the mast, except as necessary to stack the load, and shall not be raised or lowered while traveling. Forks shall be kept as low to the floor as possible (approximately 3 inches) when traveling, whether loaded or unloaded.

**9.16** Before starting rolling equipment in motion, the operator shall check to make certain that there are no persons or obstructions in the line of travel and that there are no other persons standing or sitting on any part of the equipment.

**9.17** When traveling through doorways and under obstructions, the operator shall make certain

that the load is low enough to clear. When ascending or descending ramps or inclines, travel shall be so that the load is on the uphill (high) side of the equipment.

**9.18** When passing through a blind intersection or doorway, the operator shall bring the equipment to a halt, sound the horn if so equipped, and proceed cautiously, being alert for hidden pedestrians and/or objects.

**9.19** When using rolling equipment on dock boards or bridging plates, the operator shall make certain that all stay pins and other retaining devices are securely in place. If entering a highway truck or trailer, both rear wheels of the truck or trailer shall be chocked front and back. If the highway trailer is disconnected from the tractor, a stabilizer jack shall be placed under the nose of the trailer. If entering a railroad car, the wheels of the car shall be chocked to prevent the car from moving.

**9.20** The floor of the truck, trailer, or railroad car shall be checked for damage, loose boards, etc, to make certain that the floor is sturdy enough to support the equipment and the load.

**9.21** The operator shall drive the equipment slowly and carefully and exercise caution to avoid running the wheels off the edge of the dock, dock boards, or bridge plates. The area shall be cleared of all unauthorized personnel.

**9.22** When rolling equipment is not in use, it shall be parked in the designated area, the forks lowered to the floor, the controls placed in neutral, and the keys or connector plug removed. If the equipment is parked on an incline, the drive wheels shall be chocked.

**9.23** If the equipment is battery powered and the batteries need charging, the equipment shall be properly positioned and the brakes set before starting any charging operations.

**9.24** Equipment in the charging area shall be spaced so as to allow ample room between units for safe passage and for exit in case of fire or other emergency.

**9.25** During the charging period, batteries shall be ventilated by removing the top of the battery compartments. No other work shall be permitted in the charging area while batteries are being charged.

**9.26** Long charging leads shall be routed to avoid a tripping hazard. Charging plugs, leads, and connectors shall be of the proper type to fit the batteries and meet the charging conditions.

**9.27** Batteries shall be inspected weekly to make certain connections are tight. Dirt and dust shall be removed with a fiber brush. Vent holes shall be kept clear to prevent pressure buildup in the cells and caps shall be kept tightly in place to prevent loss of electrolyte.

**9.28** Charging equipment shall be turned off before connecting or disconnecting batteries. When connecting a battery for charging, care must be taken to be sure that the charging voltage matches that of the battery to be charged.

**9.29** When connecting or disconnecting batteries from charging equipment, proper eye protection shall be worn. No open flames, cigarettes, etc, are permitted in the charging area.

**9.30** Connecting and disconnecting charging equipment shall be performed by qualified personnel only.

**9.31** Liquified Petroleum (LP gas) powered equipment is generally intended for outside use, but may be used indoors for short periods of time for bringing material in or out of a warehouse or when staging or stacking material inside. Gasoline powered equipment shall never be used indoors.

**9.32** LP gas powered equipment shall never be refueled over or near pits. LP gas is heavier than air and will settle in the lower areas creating a fire or explosion hazard.

## 10. BRIDGING PLATES AND DOCK BOARDS

**10.01** Only approved bridging plates and dock boards shall be used. Steel plates not specifically designed for use as bridging plates, and plates or dock boards that are bent or excessively damaged shall not be used.

**10.02** The surface of the bridging plates shall be kept clean of grease or oil. Insofar as possible, the plates shall be kept dry and free of ice and snow. A plate which becomes covered with ice or snow while in use or because it had been otherwise exposed to the weather shall be sprinkled with sand

to provide safe traction for employees and equipment.

**10.03** When a plate or dock board becomes worn smooth, the surface shall be treated with a nonskid material applied in accordance with the manufacturer's directions.

**10.04** Work gloves shall be worn and proper lifting techniques adhered to when handling bridging plates and dock boards.

**10.05** When plates or dock boards are equipped with fork loops, they should be moved by fork trucks whenever practical. To prevent foot injuries, plates should be slid into place and not dropped.

**10.06** Plates and dock boards should be placed so that the outer ends overlap the truck and the loading dock at least eleven inches and so that the edge of each outer end makes firm contact with the dock and vehicle.

**10.07** Plates and dock boards must be secured in position to prevent them from slipping off the platform or tailboard threshold.

**10.08** Bridging plates not in use should be stored in a safe place provided for that purpose. If stored vertically, provision shall be made to prevent the plates from falling and causing injury.

**10.09** To avoid injuries from tripping or falling at those locations where Leva Docks, Beacon adjustable dock boards or similar devices are installed, care should be taken to keep dock boards flush and the retractable boards retracted when not in use.

**10.10** Bridging plates are not required normally when using Adjust-a-truck leveling equipment. However, when the loads are such as to cause a considerable deflection in the truck springs, a bridging plate is necessary. A check should be made before raising this leveling equipment to ensure that both rear wheels of the truck or trailer are on the adjustable floor section.

**10.11** Aisle markings shall be used around the adjustable dock areas to prevent the placement of freight or other materials on the dock boards.

**10.12** Docks should never be operated while there is a load on the board because the equipment is not designed to lift heavy loads.

**10.13** Normal passage for persons and trucks should be routed outside the adjustable dock board area.

**10.14** Adjustable dock boards and truck leveling devices should be operated only by authorized employees.

**10.15** Warning shall be given to persons in the area when a dock board is to be raised or lowered.

**10.16** Before operating a truck leveling device, make sure that the truck is properly positioned on the leveling platform.

**10.17** If gasoline or other flammable liquid is spilled in the truck court within a radius of 50 feet of the platform of a truck leveling device should not be operated until all pits have been thoroughly purged of flammable liquids and vapors.

**10.18** Adjustable dock boards and truck leveling devices should be made level with the floor surface when not in use.

**10.19** Employees assisting in the loading or unloading of trucks and trailers shall make sure the emergency brake is set and wheel chocks have been placed under both rear wheels, front and back, and that the condition of the truck is such that it may be entered safely. Trucks and trailers which are excessively dirty shall be rejected or properly cleaned before loading. Trucks with bad floors shall not be accepted for shipping purposes.

**10.20** Jacks shall be placed under front of trailer if tractor is not connected.

## 11. ENVIRONMENT—WAREHOUSES, DOCKS, AND YARDS

**11.01** Aisles shall be kept clear at all times to ensure the safety of pedestrian traffic and to permit safe operation of trucks and other equipment.

**11.02** Trays, cartons, and material shall be kept within the edges of shelves to prevent them from being struck and/or dislodged by pedestrians or equipment.

**11.03** Material shall not be stored on top of shelving, bins, or cabinets. Heavy items shall be stored on the bottom shelves. Items that could roll,

slip, or fall from the shelves shall be secured or stacked so as to avoid a potential hazard.

**11.04** An approved step stool or ladder shall be used to select or place material on shelves that are too high to be reached safely from the floor. The use of trays, boxes, or shelves as steps is prohibited.

**11.05** Shelving shall be checked for stability and sturdiness, sharp edges, bent legs and frames, loose expanded metal, or any other defect that could cause an injury or affect the safe storage of material. Shelving units shall be bolted together to walls, or otherwise secured to prevent them from tipping over.

**11.06** Hampers and cartons should never be loaded above the top edges. Heavy objects shall be placed in the bottom of the container with lighter objects on top to avoid creating a top heavy load. Generally, multiunit loads in such a container should not exceed 50 pounds.

**11.07** When stacking loaded interlocking hampers and trays, limit hampers to four high in a stack and trays to seven high. The heavier hampers and trays shall be placed at the bottom of the stack to avoid creating top heavy stacks.

**11.08** Material having sharp corners, edges, or projections and parts made of glass shall be properly protected and placed in hampers or trays in such a manner that the person removing the material will not be exposed to injury.

**11.09** Empty wooden pallets shall never be stood or stored on end or leaned against stacks of material, racks, walls, columns, etc. Pallets shall be placed flat on the floor and when emptied, promptly removed to the designated storage area. Stacks of empty pallets shall not exceed 10 pallets in height.

**11.10** Wooden pallets shall be maintained in good condition. Broken, split, or loose deck boards, split or broken stringers shall be repaired before further use. Protruding nails shall be removed or driven home.

**11.11** When stacking loaded pallets, employees shall exercise care and good judgment to avoid stacking pallets on top of fragile or delicate equipment, cartons, or hampers that may collapse, or other conditions that may cause a stack to fall over and/or create a hazardous condition. Generally, loaded pallets should not be stacked more than two high.

**11.12** Before starting a conveyor belt, qualified personnel shall check to make certain there are no persons sitting, standing, or working on the conveyor system.

**11.13** Crossing conveyor lines at points other than crossing equipped with hand rails or at gates provided for passage is strictly prohibited. Under no conditions shall anyone be permitted to walk or step on conveyor rollers or moving belts.

**11.14** Conveyors shall be shut down before any attempt is made to free stoppages or jams which might occur.

**11.15** Persons working around moving machinery, such as, conveyor systems should be alert for the possibility of getting a hand or clothing caught in the machinery or between items being moved on the system. Employees should stand clear of the equipment with both feet on the floor and maintain good body balance to avoid falling into the equipment.

**11.16** All employees who work on or around conveyor systems shall know the location of the shutdown devices and how they operate.

**11.17** The following precautions shall be observed when banding material with steel or plastic strapping:

(a) While using the banding tool, employees shall wear eye protection and suitable work gloves.

(b) The employee shall face in the direction of pull with one foot ahead of the other. This will position the employee to protect himself/herself if the strapping should break or the tool slip.

(c) The employee shall not stand in the direct line of the strapping while applying final tension so that the ends will not strike the face of the employee in case of breakage.

(d) Excess strapping beyond the seal shall be broken or cut off and hammered flat to prevent injury from the sharp edges.

**11.18** Compressed air is a useful source of power and provides for a great deal of flexibility in application, but also requires care in its use.

**11.19** Never direct a stream of compressed air against any part of the body. Compressed air directed into the eyes, ears, nose, and mouth can cause serious injury. It can enter through the skin when directed toward the body at pressures normally used.

**11.20** Compressed air shall not be used for blowing dust or dirt off clothing. The cleaning of work benches or work areas with compressed air is also prohibited unless approved hoods or barriers are provided.

**11.21** Streams of compressed air let out into the atmosphere shall be directed away from the body and any nearby employees who may be in line of air flow.

**11.22** Only sound strong hoses and couplings shall be used and shall be inspected periodically for defects. Hoses shall not be kinked to stop air flow.

**11.23** Air guns and other air powered equipment shall be operated at pressures specified by the manufacturer and shall be stored in designated places when not in use. Hoses shall be draped to prevent tripping hazards and to protect them from physical damage.

## 12. CABLE REELS

**12.01** The following supplements information contained in Sections 620-020-101, 620-020-200, and 649-210-134.

**12.02** Safety glasses, safety headgear, and suitable work gloves and suitable work shoes shall be worn when handling or cutting cable, moving, or stacking reels, removing or replacing banding and lags, and when loading or unloading cable reels.

**12.03** Cable reels shall be moved with a cable reel transporter or forklift truck to the extent possible. Help should be obtained when large or heavy reels are moved manually.

**12.04** Wooden reels often pick up nails, screws, and similar debris when rolled on a hard surface. Employees shall be alert for such hazards and be careful not to slide their hands along the rims when handling wooden reels.

**12.05** All nails, staples, etc, shall be removed from lags immediately and stored in the designated areas.

**12.06** Cable reels shall be chocked or chained when unattended to prevent them from inadvertently rolling out of position and becoming an accident hazard.

**12.07** Cable reels prepared for shipment shall be securely fastened to the carrying vehicle to prevent movement of the reel that could result in injury to other persons, damage to other freight or property, or possible loss of the reel due to falling off the vehicle.

## 13. YARD OPERATIONS

**13.01** Special precautions are required when performing work on or around poles and other wood products, scrap bins, and platforms and over-the-road material hauling trailers.

**13.02** Poles, crossarms, and posts used for buried cable markers and other wood products are sometimes treated with wood preservatives. Employees whose job may require handling these products shall take the following precautions:

(a) Safety eyewear, safety headgear, and suitable work gloves and footwear shall be worn.

(b) Long sleeve garments shall be worn with the sleeves buttoned at the wrist.

(c) The neck shall be well covered by the shirt collar, handkerchief, or other piece of clean cloth.

(d) The legs of the trousers shall be kept well over the ankles.

(e) Never rub the eyes or wipe perspiration from the face with a hand, glove, or shirtsleeve that has been exposed to the product.

(f) Before lunch and after completing work where exposure has occurred, the hands, arms, face, and neck shall be washed with plenty of soap and warm water.

**13.03** When poles are handled by employees, power equipment should be used. Only those persons involved in the operation shall be permitted in the area.

**13.04** The equipment operator shall be alert to the location of other employees involved. No per-

son shall be permitted under a load being hoisted or lowered.

**13.05** When all poles are in place, they shall be secured so as to prevent them from rolling out of position.

**13.06** Scrap material usually contains sharp edges or pieces of metal, loose uncontrolled ends of wire, some broken glass, and other hazardous conditions.

**13.07** When working around scrap bins and platforms, employees shall wear proper eye protection, safety headgear, and suitable work gloves and footwear.

**13.08** Employees working in these areas should be alert for and correct tripping and other hidden hazards and maintain sound footing and good balance giving full attention to what is going on as they move about in the generally debris ladened surroundings.

**13.09** The precautions to be observed when working in or out of a trailer parked at a dock, with the tractor disconnected, are covered in Part 9, Powered Industrial Equipment.

## 14. LOADING TRUCKS

**14.01** The lack of uniformity in body configurations and loads in trucks and vans are hazards that employees must be constantly aware of.

**14.02** When climbing into or out of a vehicle for loading or unloading, the employee must be aware of low overhead clearance, projections, type of door openings, clearances, step positions, etc.

**14.03** The employee should also be alert for objects stored or lying on the floors, loose material in bins, and other conditions that could cause an accident.

**14.04** Nonslip surfaces shall be utilized, if provided, when entering or leaving the vehicle.

## 15. CROSSING STREETS AND HIGHWAYS

**15.01** This part prescribes safety precautions to be observed when crossing highways.

**15.02** Local pedestrian laws should be strictly followed.

**15.03** Stopping on a highway should only be done when it absolutely cannot be avoided.

**15.04** On an expressway with paved shoulders, signal and pull off at near traffic speeds, then slow down. Pull the vehicle as far from the road surface onto the shoulder as possible.

**15.05** Where the shoulder is unpaved, signal a right turn and slow down to a safe speed before turning off. When the vehicle is stopped, be sure that it is as far from the road surface as possible.

**15.06** Leave low-beam headlights on in dusk, darkness, or bad weather, turn on interior lights and four-way flashers.

**15.07** If it is necessary to stop close to a traffic lane, on a curve, over a hill, or in any risky location, get everyone out of the vehicle and well away from traffic.

**15.08** Day or night, place a flare or other warning device just behind the vehicle and another at least 300 feet back (about 120 paces).

**15.09** Get out of the vehicle on the off-road side if possible. When it is necessary to leave the vehicle on the driver side, walk around the front of the vehicle and back to the rear on the off-road side. From that position on-coming traffic can see you and you can see it. Proceed to cross as outlined in paragraphs 15.12 and 15.13.

**15.10** Passengers should leave the vehicle on the off-road side of the vehicle and walk to the rear of the vehicle before crossing so that on-coming traffic can see you and you can see it.

**15.11** Avoid crossing highways, if at all possible. It is safer to make a crossover in a vehicle.

**15.12** If crossing cannot be avoided, check traffic from ***all*** directions. Look left, right then left again, before proceeding.

**15.13** When it is clear ***walk*** briskly, do not run across the highway.

## 16. HOISTING OPERATIONS

**16.01** Personnel engaged in hoisting operations shall wear safety glasses, safety headgear, and suitable footwear and work gloves.

**16.02** Only properly trained, and where required licensed or certificated personnel, shall be permitted to operate hoisting equipment.

**16.03** Derricks, cranes, and other hoisting equipment shall be inspected at the beginning of each day of use to ensure that it is in safe operating condition and that it functions properly.

**16.04** Equipment shall be checked for cracked welds and broken, loose or missing gussets and braces, and other missing or defective members.

**16.05** On hydraulic operated equipment, the fluid level shall be checked and the equipment inspected for leaks, damaged or broken hoses, evidence of ruptured seals, etc.

**16.06** Operating controls and safety or limiting devices shall be inspected to ensure they are in place and functioning properly.

**16.07** Safety precautions, inspection procedures, and other information on wire rope (winch lines and wire rope slings) are covered in Sections 649-310-011 and 649-310-115.

**16.08** Hooks, rings, links, blocks, sheaves, and other miscellaneous equipment used in hoisting operations shall be inspected each day of use for sharp edges, burrs, cracks, frozen sheaves or rollers, and any other condition that could cause an accident resulting in injury to a person, damage to other equipment, or that might reduce the rated capacity of the item.

**16.09** All defects in any piece of equipment shall be corrected before the equipment is used. If a defect cannot be corrected the item shall be promptly removed from service. Repaired equipment shall be maintained at least at the same factor of safety as the original designed equipment.

**16.10** Work area protection shall be provided that will keep on-lookers at a safe distance and safely route pedestrian and motor vehicle traffic around the area of operations. It shall also provide for the safety of the employees within the work area. Standard work area equipment and arrangements are covered in Sections 620-135-010 and 620-135-100.

**16.11** After positioning a hoisting vehicle, the operator shall check the planned path of travel and position of the boom for possible conflict with power conductors (of any voltage) or other overhead obstructions. If potential conflict does exist the vehicle shall be repositioned to eliminate the conflict.

**16.12** After a hoisting vehicle has been properly positioned, the parking brake shall be set, the mico-brake lock actuated, if so equipped, wheel chocks placed in front and back of rear wheels on both sides, and the outriggers placed in position. When placing the outriggers, the operator shall make certain that the footing of the outriggers is adequate to support the stresses to which they will be subjected.

**16.13** The operator shall stand only on the platform or at the console in the positions provided. It is not necessary for the operator to wear insulated gloves or stand on an insulating blanket when operating the equipment from the designated operating positions. However, insulating gloves and insulating blankets must be within easy reach for emergency use, when the boom is in the vicinity of power conductors of any voltage. When working in the vicinity of power conductors, all other personnel involved shall wear insulating gloves, and insulating blankets shall be readily available.

**16.14** In the event of an emergency and it is necessary for the operator to leave the vehicle while the boom is in contact with a power conductor, the operator shall put on the insulating gloves, throw the insulating blanket on the ground near the vehicle and step off the vehicle onto the blanket. Contact with any other object shall be avoided until the operator is free and clear of the vehicle.

**16.15** Should it be necessary to board a vehicle while the boom is in contact with a power conductor, the person boarding the vehicle shall put on a pair of insulating gloves, spread an insulating blanket near the vehicle, step onto the blanket, and after breaking contact with all other objects, board the vehicle.

**16.16** The boom and associated lines shall be kept away from all power conductors, regardless of voltage. OSHA requires that, except where the electrical distribution and transmission lines have been deenergized and visibly grounded at the point of work, or where insulating barriers, not a part of the attachment to the crane, have been erected to prevent physical contact with the lines, cranes shall be oper-

ated near power lines only in accordance with the following:

(a) For lines rated 50KV or below, minimum clearance between the power conductors and any part of the equipment shall not be less than 10 feet.

(b) For lines rated over 50KV, minimum clearance between lines and any part of the crane must be either 10 feet plus 0.4 inch for each 1KV over 50KV or twice the length of the line insulator but never less than 10 feet.

(c) In transit with no load and the boom lowered, the clearance shall be not less than 4 feet.

If these clearances cannot be maintained, the power company or owner of the power line shall be requested to disconnect the power and ground the circuit before proceeding with the work.

**16.17** To the extent practicable, the boom should be positioned with no load. If it is necessary to position the boom while the load is suspended, allowance should be made for the possibility that the boom may rise when the load is removed and cause the boom to contact the power conductors.

**16.18** If the boom is going to be in the proximity of power conductors, all tools and equipment that will be required during the operation shall be removed from the hoisting vehicle and safely positioned so that they will be available as needed. No one shall be permitted to make physical contact with the vehicle once the boom is in position except as noted in paragraphs 16.14 and 16.15.

**16.19** The operator must know the rated capacity of the equipment being used. Under no condition should the rated capacity be exceeded. There may be times when it is advantageous to "double block" a line when handling a load. Because of the mechanical advantage gained by this procedure (makes it possible to lift greater loads with equal or less effort), extreme caution must be exercised to ensure that the rated capacity of the equipment is not exceeded. This procedure does not change the rated capacity of the equipment.

**16.20** The boom shall be operated with a minimum of overhang and at the steepest working angle adaptable to the situation so the load can be controlled and the stress on the derrick members will be at a minimum.

**16.21** Loads to be hoisted shall be secured so as to avoid shifting, tipping, or falling off the lifting conveyance. Slings and lines shall be attached so as to keep the load level balanced with the center of gravity low enough to prevent tipping. Employees shall keep their hands out of pinch points when holding a hook or sling in place while slack is taken up.

**16.22** Loads shall never be dragged or pulled along the ground or other surface by the boom in preparation for lifting. The load shall be positioned directly under the boom head so that when the lifting has started, the rise is vertical and there is no lateral strain on the boom.

**16.23** A heavy load shall never be removed from a truck by hooking a crane to the load and then having the truck pull out from under it. The load shall first be lifted clear of the truck to make sure the crane can handle the load before the truck is moved.

**16.24** The operator shall always be aware of the position of the hoisting ball or hook when extending the boom or retrieving the winchline to keep from pulling the ball or hook into the upper sheave and possibly causing the line to break or causing other damage to the equipment. The winchline shall be kept under tension to prevent the line from binding or fouling on the drum.

**16.25** When hoisting on windy days or when additional control of the load is required, one or more tag lines shall be attached to the load so that employees on the ground and/or working aloft can control the lateral movement of the load. Guidelines shall be dry, nonmetallic lines and shall be long enough to permit those handling the lines to position themselves safely, well out from under the load.

**16.26** Employees working above ground level, such as on the second or higher floor of a building, a raised platform, etc, shall be equipped with a safety harness to prevent them from being pulled out of position and/or losing their balance when handling a load.

**16.27** When hoisting and/or work operations are in progress around central office equipment, necessary precautions shall be taken to guard against injury to employees, damage to equipment, or any activity that could result in interruptions to service.

**16.28** The operator shall have full view of the operations at all times. Communications shall be established between the person controlling the operations and the operator through the use of radios, telephones, or hand signals.